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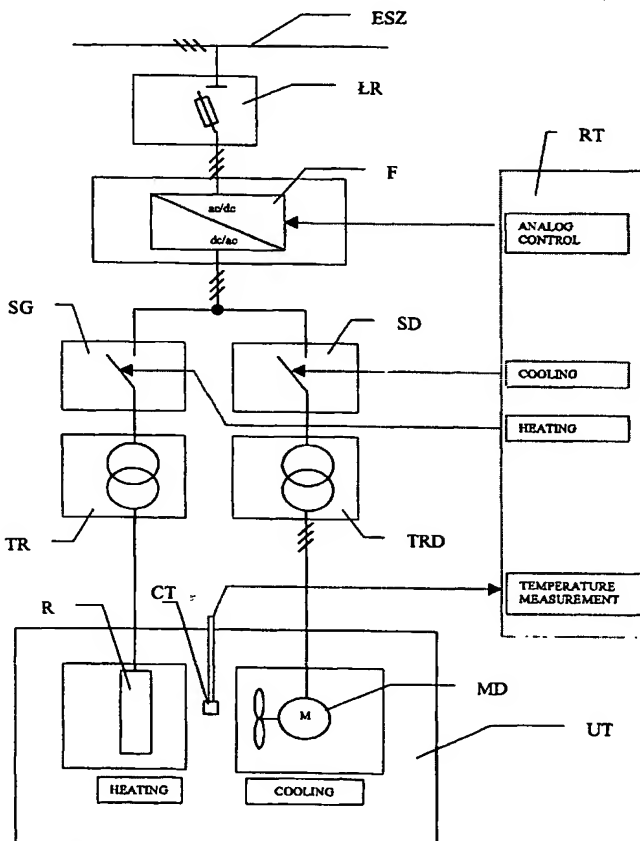
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(54) Title: **TEMPERATURE CONTROL SYSTEM**



(57) Abstract: The purpose of the present invention is to create a temperature control system applied in heating and cooling phases of thermal processing. The invented temperature control system consists of a single frequency converter F to whose output, through contactors, are simultaneously connected: at least one heating system and at least one cooling system. The heating system incorporating resistance heating elements R is actuated by the heating system contactor SG. The cooling system incorporating gas blower, 3-phases induction motor MD is actuated by the blower motor contactor SD. The heating and cooling system contactors (SG and SD) are connected to the output of the frequency converter F and are controlled by the temperature controller RT.

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INTERNATIONAL SEARCH REPORT

International Application No.

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A. CLASSIFICATION OF SUBJECT MATTER
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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G05D H05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

PAJ, EPO-Internal, WPI Data, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	PATENT ABSTRACTS OF JAPAN vol. 1996, no. 02, 29 February 1996 (1996-02-29) & JP 07 272847 A (MATSUSHITA ELECTRIC IND CO LTD), 20 October 1995 (1995-10-20) abstract	1
A	EP 1 182 413 A (BRUECKNER TROCKENTECHNIK GMBH) 27 February 2002 (2002-02-27) abstract column 3, line 25 -column 3, line 30	1

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date		Patent family member(s)	Publication date
JP 07272847	A	20-10-1995	JP	3257236 B2	18-02-2002
EP 1182413	A	27-02-2002	DE	10040788 A1	07-03-2002
			EP	1182413 A1	27-02-2002